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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.     | CONFIRMATION NO. |
|-----------------|-------------|----------------------|-------------------------|------------------|
| 10/708,516      | 03/09/2004  | Dale Crombez         | 81044472 / FMC 1643 PUS | 2515             |

28395 7590 05/27/2005  
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EXAMINER

SCHWARTZ, CHRISTOPHER P

ART UNIT PAPER NUMBER

3683

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/708,516

Applicant(s)

CROMBEZ ET AL.

Examiner

Christopher P. Schwartz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

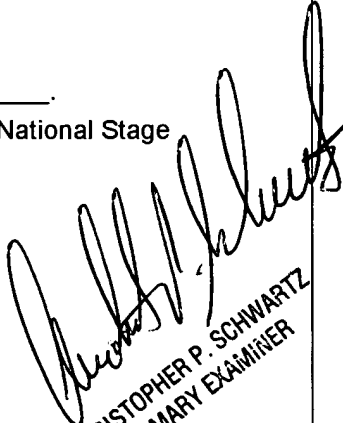
- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date: \_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-915)
- 6) ☐ Other: \_\_\_\_

  
CHRISTOPHER P. SCHWARTZ  
PRIMARY EXAMINER

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statements have been received and considered.

### ***Claim Objections***

2. Claims 2-12, 14-17, 19, 20 objected to because of the following informalities:  
Applicant should carefully review the limitations in these claims. Although dependency of the claims appears proper, some of the limitations do not. For instance if the "first vehicle condition" is in fact the vehicle deceleration, as claimed in claim 2, it is unclear how the second vehicle condition is the vehicle speed, as claimed in claim 3, if the second vehicle condition reaches the first predetermined value and is based on the first vehicle condition. Deceleration is determined or "based on" speed, not vice-versa. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5,13-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider '470 in view of US publication to Hara et al. '266.

Regarding claims 1,13,18 Schneider discloses a combined friction and regenerative braking system that can apportion the regenerative braking based upon predetermined vehicle conditions such as imminent wheel lock-up. Note the microprocessor based control units at 38,52. The device also includes front to rear brake proportioning control of the overall braking forces. Please refer to the discussion in column 5 in its entirety.

Schneider lacks a specific discussion of reducing the regenerative braking torque to zero, although presumably this happens to avoid any uncomfortable sensation to the driver upon excessive deceleration.

The reference to Hara et al. is more clear in this regard. See the abstract, the discussion in paragraphs 0007, 0008, 0077 in their entirety. Applicants should however review this entire document for the "vehicle conditions" discussed therein.

As broadly claimed by applicant the first and second vehicle conditions and first and second predetermined values could just about be anything under the sun with regard to the vehicle driving condition. This reasoning is somewhat substantiated in applicants dependent claims. For instance vehicle deceleration may be determined from vehicle speed. The vehicle speed may be determined from wheel speed. Pedal

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position or rate of depression thereof may be used to estimate braking force applied to the wheels, which may in turn be used to determine brake torque etc.

Such "conditions" and "values" as broadly claimed are notoriously well known in the art. The references to Schneider and Hara et al. generally teach this throughout their disclosures even if not discussed with any degree of particularity. Further the prior art of record cited but not relied upon also discuss these notoriously well known limitations. Applicant should carefully review the prior art cited for a teaching of the general knowledge available to the ordinary skilled worker in the art.

It would have been obvious to the ordinary skilled worker in the art at the time of the invention to have incorporated the teachings of the reduction of regenerative braking force as taught by Hara into Schneider to improve overall driveability of the vehicle.

As broadly claimed the requirements of claims 2-5,14-17,19,20 are fairly suggested by the combined references above.

6. Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider '470 in view of Hara et al. as applied to claims 6 above, and further in view of Crombez et al., Kuno et al., or Kidston et al..

Regarding claims 6, Schneider '470 in view of Hara et al., lack disclosing using predetermined "torque curves" to control the regenerative braking torque.

However such ideas, as broadly claimed, are well known in the art. Please see Crombez et al. col. 5 lines 10-25, Kidston et al. col 5 lines 15-52, and Kuno col. 7 lines 49+ over to col. 9.

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One having ordinary skill in the art at the time of the invention would have found it obvious to have modified Schneider et al., as modified, with look up tables, torque maps or torque curves to adjust the regenerative braking torque to predetermined requirements such as rate of deceleration, level of battery charge, imminent activation of ABS or stability control modes as such a method would merely amount to an alternate equivalent method to that of Schneider et al., as modified by Hara.

Regarding claims 7-12 these limitations, as broadly claimed, are fairly suggested by the references above.

7. It is strongly recommended applicant reconsider the breadth of the claims upon amendment in light of the prior art of record.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **The references cited but not relied upon should be carefully reviewed for teaching "vehicle conditions" and their interdependency that are notoriously well known in the art.**

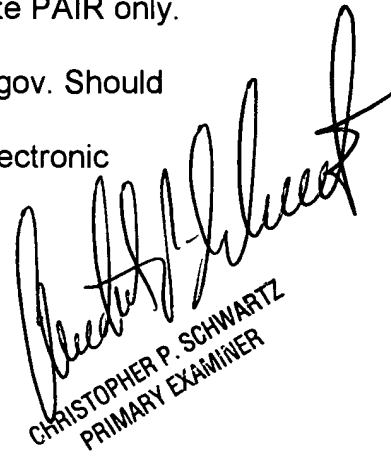
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Schwartz whose telephone number is 703-308-0576. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Bucci can be reached on 703-308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cps  
5/18/05



CHRISTOPHER P. SCHWARTZ  
PRIMARY EXAMINER